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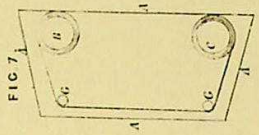
FIG. 7.

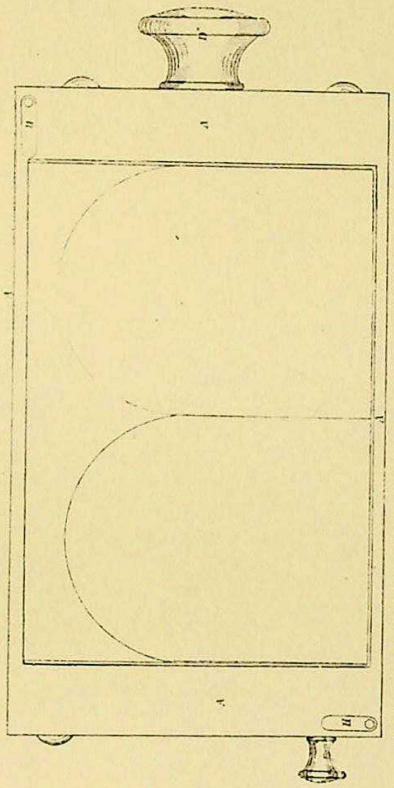
FIG. 1.

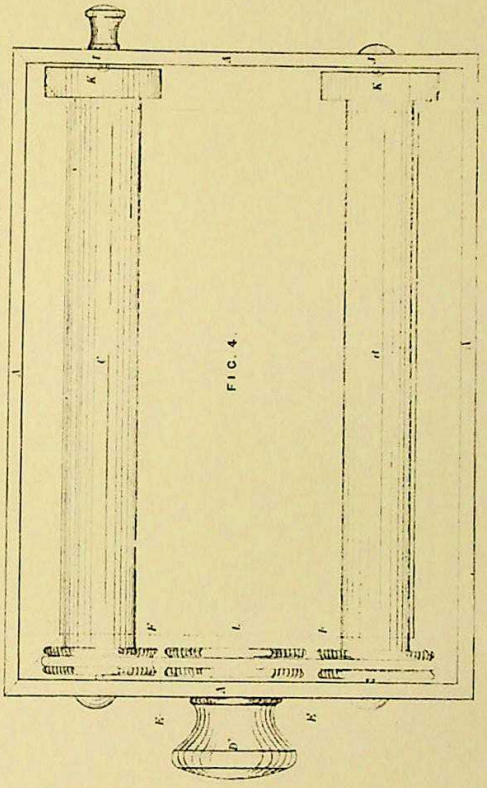
FIG. 4.

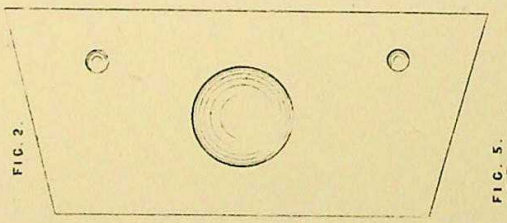
FIG. 2.

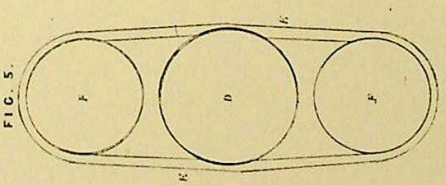
FIG. 5.

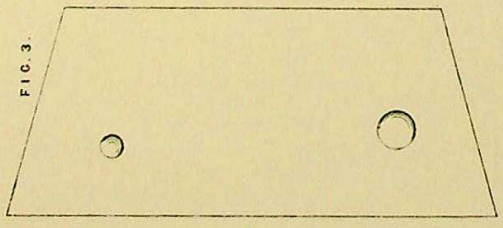
FIG. 3.

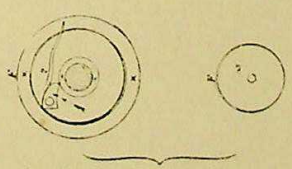
FIG. 6.

A.D. 1858, MARCH 22. N° 591.
MANWARING'S SPECIFICATION.

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88. OPTICS,
Stereoscopes.

A.D. 1858, *22nd March.* N° 591.

Stereoscopic Apparatus.

LETTERS PATENT to Edward John Manwaring, of Lee, in the County of Kent, Gentleman, for the Invention of "IMPROVEMENTS APPLICABLE TO STEREOSCOPIC APPARATUS."

Sealed the 22nd September 1858, and dated the 22nd March 1858.

PROVISIONAL SPECIFICATION left by the said Edward John Manwaring at the Office of the Commissioners of Patents, with his Petition, on the 22nd March 1858.

I, EDWARD JOHN MANWARING, of Lee, in the County of Kent, Gentleman, do hereby declare the nature of the said Invention for "IMPROVEMENTS APPLICABLE TO STEREOSCOPIC APPARATUS," to be as follows:—

This Invention consists in the application to or combination with a stereoscope or apparatus for exhibiting stereoscopic, photographic, or other similar views, of a system of rollers, whereby views placed upon flexible material may be wound, unwound, and rewound in the same manner as cloth could be wound around such rollers, so as to be brought up to and taken away from sight by acting upon the said rollers, without the trouble of taking away each separate view and putting another in its place by hand.

The foregoing is a description of the nature of the Invention, which may probably be varied in its practical details.

Manwaring's Improvements Applicable to Stereoscopic Apparatus.

SPECIFICATION in pursuance of the conditions of the Letters Patent, filed by the said Edward John Manwaring in the Great Seal Patent Office on the 22nd September 1858.

TO ALL TO WHOM THESE PRESENTS SHALL COME, I, EDWARD JOHN MANWARING, of Lee, in the County of Kent, Gentleman, send greeting.

WHEREAS Her most Excellent Majesty Queen Victoria, by Her Letters Patent, bearing date the Twenty-second day of March, in the year of our Lord One thousand eight hundred and fifty-eight, in the twenty-first year of Her reign, did, for Herself, Her heirs and successors, give and grant unto me, the said Edward John Manwaring, Her special licence that I, the said Edward John Manwaring, my executors, administrators, and assigns, or such others as I, the said Edward John Manwaring, my executors, administrators, and assigns, should at any time agree with, and no others, from time to time and at all times thereafter during the term therein expressed, should and lawfully might make, use, exercise, and vend, within the United Kingdom of Great Britain and Ireland, the Channel Islands, and Isle of Man, an Invention for "IMPROVEMENTS APPLICABLE TO STEREOSCOPIC APPARATUS," upon the condition (amongst others) that I, the said Edward John Manwaring, my executors or administrators, by an instrument in writing under my, or their, or one of their hands and seals, should particularly describe and ascertain the nature of the said Invention, and in what manner the same was to be performed, and cause the same to be filed in the Great Seal Patent Office within six calendar months next and immediately after the date of the said Letters Patent.

NOW KNOW YE, that I, the said Edward John Manwaring, do hereby declare the nature of my said Invention, and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

(I.) The nature of the said Invention consists in the application to or combination with the stereoscope, or apparatus for exhibiting stereoscopic, photographic, or other similar views, of a system of rollers, whereby views produced or placed upon flexible material may be wound, unwound, and rewound upon or from such rollers, so as to be brought up to and taken away from sight by acting upon the said rollers, without the trouble of taking away each separate view and putting another in its place, as heretofore practised.

(II.) Having described the nature of the said Invention, I now describe in what manner the same is to be performed, wherein I shall refer to the Drawing hereto annexed, as hereafter followeth:—

Description of the Drawing.

Fig. 1 is a front view of a box or case containing the apparatus above mentioned, this being intended to be attached to the bottom of a stereoscope; Fig. 2, one end of such box or case; Fig. 3, the other end thereof; Fig. 4, back view of the box or case, exposing the rollers; Fig. 5, view of the ends of the pulley wheels on the working rollers, as they appear when the end of the box or case is removed. Fig. 6, view of pulley wheel marked F, one such being fitted and rotating on an axle of each roller C and B; Fig. 7, transverse vertical section shewing the whole system of rollers, with the endless band of views thereon.

A denotes the box or case; B, top working roller; C, bottom working roller; G, G, (see Fig. 7) guiding rollers for keeping the views flat; D is a pulley or driving wheel, to the axle of which the knob or turning handle $D^{\times}$ is attached, whereby the pulley wheels F, F, on the axle of the roller B and the roller C respectively are set in motion, inasmuch as the motion given to D is communicated to the others by the driving cord or band E, which may be of india-rubber or other suitable material. It will be seen by Fig. 6 that the pulley F has the face which is toward the end of the roller recessed except at the parts marked ×, (the black part in the centre indicating the axis). In this recessed part is a catch piece 1, which is loosely secured by a pin; this catch piece is pressed upon by a spring 2, by which arrangement the roller is suffered to turn one way only (that is in the direction of the arrow's head), by reason that there is a stud or projecting pin (3) on the end of the roller (F), which comes against the face of the pulley. This spring catch arrangement is reversed in position on each roller, so that the turning handle makes one roller to roll off and the other roll on. I denotes a screw, which forms the axis of one end of roller, working in a socket in that end of said roller; it can be unscrewed by turning the knob attached, and thus the roller may be unshipped. J denotes a similar, except that instead of a knob there is the usual cross-cut screw head. There is acting upon the enlarged part K of the roller (B or C) a spring, which presses against the edge. It is evident that by turning the handle the working rollers will be set in motion, and thus the roll of flexible material, having the views thereon, will be wound off the one roller on to the other, passing before the eye of the spectator, being kept flat by the guide rollers (G, G,). This box or case is attached to the bottom of the stereoscopic apparatus, by means of the catches H, H, which catch into the bottom part where the views are placed under the old system; but any other convenient mode of attachment may be adopted.

Instead of a box or case the apparatus might consist of a framework, securing together the whole system of rollers, &c.

Instead of the wheels being worked by cords or bands, they may be worked by toothed wheels or any other mechanical equivalent.

Although the Drawing shews the apparatus so constructed that it may be attached to the bottom of the stereoscope, yet it might be placed in a proper position conjunctively with any suitable apparatus of a binocular character, and so exhibit the views to the eye as they are brought up by turning the handle aforesaid.

It is to be remarked that my Invention enables me to produce transparent views, although not depicted on glass, as I have my views depicted on a transparent textile or other material.

(III.) Having now described the nature of the said Invention, and in what manner the same is to be performed, I declare that I claim the nature whereof is set forth in the outset (marked I.) of this my Specification thereof.

In witness whereof, I, the said Edward John Manwaring, have hereunto set my hand and seal, this Twenty-first day of September, in the year of our Lord One thousand eight hundred and fifty-eight.

E. J. MANWARING. (L.S.)

Witness,
F. W. Campin, Patent Agent,
156, Strand.

LONDON:
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Printers to the Queen's most Excellent Majesty. 1858.